

Section A

INDEX TO VOLUME XIV

Authors

- Allen, F. and Oretzki, M. J.—The scotoscopic effect in vision, 71.
- Ballard, B. G.—An electronic speed governor, 134.
- Bronson, H. L., Hewson, E. W. and Wilson, A. J. C.—The heat capacity of silver and nickel between 100° and 500° C., 194.
- Bronson, H. L. and Wilson, A. J. C.—The heat capacities of silver, nickel, zinc, cadmium and lead from -80° to 102° C., 181.
- Convey, J.—See Smith, S.
- Crooker, A. M.—The hyperfine structure of lead III, 115.
- Dennis, W. M.—See Rannie, J. L.
- Foster, J. S.—A large quartz spectrograph for examination of biological material, 173.
- Harrington, E. L.—See Wrenshall, G. A.
- Hay, R. H.—See Robertson, J. K.
- Hewson, E. W.—See Bronson, H. L.
- Howlett, L. E.—A photoelectric photometer, 38.
- Hurst, D. G.—See Watson, W. H.
- Lang, R. J.—The spectrum of trebly ionized thorium, 43.  
The spectrum of trebly ionized cerium, 127.
- Larose, P.—A convenient microprojection apparatus, 131.
- McKinley, D. W. R.—See Pitt, A.
- Misener, A. D.—Magnetic effects and current sensitivity of superconducting films, 25.
- Niven, C. D.—The calibration of platinum thermometers at the boiling point of sulphur, 1.  
A gas-tight furnace for thermocouple standardization, 177.
- Oretzki, M. J.—See Allen, F.
- Pitt, A. and McKinley, D. W. R.—Variation with temperature of the piezoelectric effect in quartz, 57.
- Rannie, J. L. and Dennis, W. M.—Axis strain in theodolites, its effects, and one method of removal, 93.
- Robertson, J. K. and Hay, R. H.—Studies in the spectra of high-frequency discharges in mercury vapor. II. Comparison of electrodeless with external electrode excitation. III. Modification due to wave-length, 201.
- Ruedy, R.—Propagation and resonance of composite waves in prismatic rods, 66.  
Propagation and resonance of longitudinal waves in prismatic rods, 48.  
Vibrations of power lines in a steady wind. III. The free vibrations of a heavy string, 16.
- Sanders, F. H.—Intensity measurements in the diffraction of light by ultrasonic waves, 158.
- Sinclair, G.—Determination of the natural wave-length of an antenna by the reactance method, 87.
- Smith, S. and Convey, J.—The hyperfine structure separations of some terms in the Thallium II spectrum, 139.
- Watson, W. H. and Hurst, D. G.—Alkali metal films transparent in the Schumann region, 153.
- Wilson, A. J. C.—See Bronson, H. L.
- Wrenshall, G. A. and Harrington, E. L.—A method of measuring absorption coefficients for X-rays by means of a tri-electrode ionization chamber, 209.

Section A

INDEX TO VOLUME XIV

Subjects

- Absorption coefficients** for X-rays, A method of measuring, by means of a tri-electrode ionization chamber, (Wrenshall and Harrington), 209.  
Tri-electrode ionization chamber, 213.
- Actinium III**, Note on spectrum of, 46.
- Alkali metal films** transparent in the Schumann region, (Watson and Hurst), 153.
- Antenna**, Determination of natural wavelength of, by the reactance method, 87.
- Apparatus for**  
heat capacities of metals, 182.  
microprojection, 131.  
production of alkali metal films, 153.  
production of ultrasonic waves, 159.  
study of variation with temperature of piezoelectric effect in quartz, 58, 60.
- Axis strain in theodolites**, its effects, and one method of removal, (Rannie and Dennis), 93.  
Application of general case, 97.  
Calculation of diametral strain errors, 98.  
Causes of apparent alidade axis strain, 102.  
Circle graduation errors, 108.  
Collimator adjustment, 111.  
Equipment for determining, 95.  
General case for determination of errors due to, 96.  
Method of testing, 94.  
Observational and other errors, 109.  
Removal of axis strain, 105.  
Source of strain errors, 100.  
Standard of comparison, 99.  
Strain in horizontal circle axis, 107.  
Testing of small theodolites for axis strain, 102.  
Tests on theodolites with strained and unstrained axis systems, 104.
- Broadcasting**, See Radio.
- Calibration of platinum thermometers** at the boiling point of sulphur, (Niven), 1.
- Catenary**, Free oscillations of, 18.
- Cerium**, The spectrum of trebly ionized, (Lang), 127.
- Cerium IV**, Note on spectrum of, 47.
- Color**, Scotoscopic effect with complementary colors, 84.
- Current sensitivity** and magnetic effects of superconducting films, 25, 32.
- Cycloid**, Small oscillations of the, 22.
- Delta value** of platinum thermometer, Effect of experimental errors on, 11.
- Diffraction of light** by ultrasonic waves, Intensity measurements in the, (Sanders), 158.
- Discharges**, high-frequency, in mercury vapor, Studies in the spectra of, 201.
- Electronic speed governor**, 134.
- Films**  
Alkali metal, transparent in the Schumann region, 153.  
Superconducting, Magnetic effects and current sensitivity of, 25, 32.
- Furnace**, A gas-tight, for thermocouple standardization, (Niven), 177.
- Governor**, An electronic speed. (Ballard), 134.  
Limits of performance, 137.  
Other applications, 138.
- Hartmann method** of focusing, 176.
- Heat capacity**  
of silver and nickel between 100° and 500° C., (Bronson, Hewson and Wilson), 194.  
of silver, nickel, zinc, cadmium and lead from -80° to 120° C., (Bronson and Wilson), 181.  
Empirical equations, 188.
- Hyperfine structure** of lead III, (Crooker), 115, 117.
- Hyperfine structure** separations of some terms in the thallium II spectrum, 139.
- Ionization chamber**, Tri-electrode, 213.
- Isotopes** of lead, Spectra of, 115.
- Lanthanum III**, Note on spectrum of, 47.
- Lead III**, Hyperfine structure of, 115, 117.  
Magnetic hyperfine structure due to  $Pb^{207}$ , 123.  
Hyperfine structure due to isotope shift, 125.

## Light

Intensity measurements in the diffraction of, by ultrasonic waves, 158.

Transmission of, through glasses, solutions, etc., A photoelectric photometer for measuring, 38.

**Longitudinal waves**, Propagation of, See Prismatic rods.

**Magnetic effects** and current sensitivity of superconducting films, (Misener), 25.

**Magnetic hyperfine structure** due to  $Pb^{207}$ , 123.

**Microprojection**, Apparatus, (Larose), 131.

**Motors**, Speed control of. See Governor.

**Oscillations**, Small, in the plane of an oscillating string, 16.

Free, of catenary, 18.

Small, of the cycloid, 22.

**Photoelectric photometer** for measuring transmission of light through glasses, solutions, etc., (Howlett), 38.

**Photometer**, A photoelectric, (Howlett), 38.

**Photoscopic effect**, 71.

**Piezoelectric effect** in quartz, Variation with temperature, (Pitt and McKinley), 57.

Apparatus

Statistical method, 58.

Dynamical method, 60.

**Platinum thermometers**, Calibration of, at the boiling point of sulphur, 1.

Resistance

Measurement of, 6.

Calculation at  $444.6^\circ \text{C.}$ , 8.

Geometrical relations, 9.

**Power lines**, See Vibrations of, in a steady wind.

**Prismatic rods**, Propagation and resonance of longitudinal waves in, (Ruedy), 48.

Wave equations for the elastic solid body, 49.

Frequency equations, 51.

Influence of boundary conditions, 52.

**Propagation and resonance of longitudinal waves** in prismatic rods, 48.

**Quartz spectrograph** for examination of biological material, 173.

**Radio**, Determination of natural wave-length of an antenna by the reactance method, (Sinclair), 87.

**Reactance method**, Determination of natural wave-length of an antenna by, 87.

**Resistance**, electrical, of platinum thermometers, Measurement of, 6.

**Resonance frequencies** in prismatic rods, 48.

**Scotoscopic effect** in vision, (Allen and Oretzki), 71.

**Spans**, Vibration-proof, 23.

## Spectra of

Actinium III, 46.

Cerium IV, 47.

high-frequency discharges in mercury vapor, Studies in the, (Robertson and Hay), 201.

Lanthanum III, 47.

lead, Hyperfine structure of lead III, 115.

thallium II terms, Hyperfine structure of some, 139.

trebly ionized thorium, (Lang), 43.

Series limits and ionization potential, 46.

**Spectrograph**, A large quartz, for examination of biological material, (Foster), 173.

Hartmann method of focusing, 176.

**Spectrum** of trebly ionized cerium, 127.

**Strain errors**, See Axis strain in theodolites.

**Superconducting films**, Magnetic effects and current sensitivity of, 25, 32.

**Surveying**, See Axis strain in theodolites.

**Temperature**, Variation of piezoelectric effect in quartz with, (Pitt and McKinley), 57.

**Thallium II spectrum**, The hyperfine structure separations of some terms in the, (Smith and Convey), 139.

Isotope displacement, 144.

**Theodolites**, See Axis strain in theodolites.

**Thermocouple standardization**, A gas-tight furnace for, 177.

**Thermometers**, platinum, Calibration of, at boiling point of sulphur, 1.

**Thorium**, trebly ionized, Spectrum of, (Lang), 43.

Series limits and ionization potential, 46.

**Tin**, Magnetic effects and current sensitivity of superconducting films of, 25.

**Ultrasonic waves**, Intensity measurements in the diffraction of light, 158.

— IV —

**Vibrations of power lines** in a steady wind

III. The free vibrations of a heavy string, (Ruedy), 16.

Free oscillations of the catenary, 18.

Small oscillations, 16.

in plane of string, 16.

of the cycloid, 22.

Vibration-proof spans, 23.

**Vision**, Scotoscopic effect in, 71.

Photoscopic effect, 71.

**Wave-length**, Natural, of an antenna, Determination of, by the reactance method, (Sinclair), 87.

intercept method, 88.

direct measurement, 87.

reactance method, 89.

**Waves**, longitudinal, Propagation and resonance of, See Prismatic rods.

**Waves in prismatic rods**, Propagation and resonance of composite, (Ruedy), 66.

Composite waves, 68.

Ordinary longitudinal waves, 67.

---

ERRATUM

Page 188, fourth line of second footnote, for  $\frac{\alpha^2}{\rho\beta}$ , read  $\frac{\alpha^2 T}{\rho\beta}$ .

NEW  
BOOKS



UM